

## REMARKS

Claims 1-37 are pending in the application and stand rejected. Objections were made to the drawings and specifications. Applicant respectfully requests reconsideration of the claim rejections and drawing and specification objections based on the above specification amendment and the following remarks.

### Drawing Objections

The drawing were objected to under 37 CFR 1.83(a) for the reasons set forth on page 2 of the Office Action. To the extent that the drawing objections are understandable, it is respectfully submitted that there is no requirement in 37 CFR 1.83(a) that (i) every figure illustrate every claimed feature; (ii) that the figures need written phrases and/or terms next to pictorials, relative to claims, such that the figure stands alone, or (iii) that catch phrases next to application figures are needed to emphasize each significant feature.

All that is required under 37 CFR 1.83(a) is that drawings *show every feature of the invention specified in the claims*. Here, Applicant respectfully traverses the drawing objections on the ground that elements of Claims 3, 6, 10, 14 and 19 are clearly illustrated throughout the drawings.

With respect to Claim 3, Fig. 1, for example, clearly illustrates a stationary tracker source (21) and Fig. 4d, for example, clearly illustrates a sensor circuit (43) embedded in the given component part (40) for sensing the position of the given component part.

With respect to Claim 6, Figs. 1, 4a, 4b, 5b and 5d, for example, clearly illustrate a docking mechanism of a TFM (22, 22b) that insertably engages a receptacle (41, 41a) on a given component part.

With respect to Claim 10, Figs. 1 and 5a-e, for example, clearly illustrate a marking jig (23, 24 or 25) for measuring tracker data of relevant points of a given component part to generate a CAD representation of the given component part.

With respect to Claim 14, Figs. 1 and 5d, for example, clearly illustrate a marking jig (24) that is configured for measuring tracker data associated with a radius of a given component part (501).

With respect to Claim 19, Figs. 4a, 4b, and 6, for example, clearly illustrate a method of obtaining a part ID code including insertably engaging a docking mechanism of the TFM with a docking receptacle of the component physical part; encoding the part ID based on a shape of the docking receptacle; sensing the shape of the docking receptacle; and transmitting a corresponding part ID from the TFM based on the sensed shape of the docking receptacle.

Accordingly, withdrawal of the drawing objections is requested.

#### **Specification Objections**

The specification was objected to for the reasons set forth on pages 2-3 of the Office Action.

With respect to the objection of the specification at page 11, lines 4-7, to the extent that such objection is understandable, it is respectfully submitted that there is no requirement under the Patent laws that the claims disclose or contain every feature or element in the specification. Thus, there is nothing improper with the recitation of the phrase "one or more sensors" in the specification despite that such subject matter may not be recited in the claims. Thus, the objection is traversed.

With respect to the objection of the specification at page 20, lines 19-20, as set forth above, Applicant has amended the specification by replacing the phrase "Fig. 5b" with - - Figs. 5c and 5e --. Thus, withdrawal of the specification objections is requested.

#### **Duty of Disclosure**

Applicant is keenly aware of his duty of disclosure under 37 CFR § 1.56. However, Examiner is respectfully reminded that the duty under 37 CFR § 1.56 is not to "provide all prior art" as asserted in the Office Action, but rather to, among other things, disclose all known information that is **material to patentability with respect to the pending claims** .

Thus, despite the fact that Examiner has found an article purportedly authored, in part, by the Applicant, Applicant has no duty to disclose the article unless it is material to the claims. In the case at bar, given that no claim rejection has been asserted using such article, it appears that Examiner even acknowledges that the article is not relevant, much less material, to the currently pending claims. There is simply no duty to submit information which is not material to the patentability of an existing claim (see 37 CFR § 1.56(a)).

#### **Claim Rejections - 35 U.S.C. § 102**

Claims 1-37 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,778,177 to Azar. Applicant respectfully traverses the claim rejections as being unsupported by the teachings of Azar.

Under 35 U.S.C. 102, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the claim. (See MPEP

§ 2131. ). The single prior art reference must disclose all of the elements of the claimed invention functioning essentially in the same manner (see, Shanklin Corp. v. Springfield Photo Mount Corp., 521 F.2d 609 (1<sup>st</sup> Cir. 1975). It is respectfully submitted that *at the very minimum*, for the reasons set forth below, Azar is legally deficient to establish a *prima facie* case of anticipation against claims 1, 15 and 27.

**On a fundamental level, there are major differences between the teachings of Azar and the inventions of claims 1, 15 and 27.**

Azar is simply directed to a system that enables scanning of an object or a surface to obtain information that can be used for generating and displaying a computer generated image (e.g., 3D image) of the object or surface (see, e.g., Col. 1, lines 26-43).

In contrast, the claimed inventions are generally directed to systems and methods for simultaneous construction of a corresponding CAD model and physical model. The CAD model comprises a plurality of CAD representations each corresponding to a physical component part that is used to construct the physical model. During construction of a physical model using individual component parts, a CAD system according to an embodiment of the invention can identify a given component part and retrieve its CAD representation from a CAD library. In addition, the CAD system allows the user to build a CAD representation of a given component part if its CAD representation is not stored in the CAD library. After the CAD representation of the component part is generated, the CAD system will track the motion (position and orientation) of the part as it is maneuvered into a desired position in the physical model. The position and orientation, as well as the CAD representation of the component part as it exists in the physical model is saved in a CAD model database. During assembly, the CAD system renders an image

of the CAD model as each part is added.

More specifically, the invention of claim 1 is directed to a CAD (computer-aided design) system that includes a CAD application that can generate a CAD model of a physical model, wherein the CAD model comprises a plurality of CAD representations, where each CAD representation corresponds to a component part of a physical model. The CAD system comprises a tracking system that generates tracker data associated with a given component part, which is processed to generate a CAD representation of the given component part and determine the position and orientation of the component part with respect to the physical model as the component part is placed in a desired position in the physical model.

Moreover, claims 15 and 27 are directed to methods for simultaneously constructing a corresponding physical model and CAD model by generating a CAD representation of a given component physical part based on relevant points of the component physical part. The methods further include tracking coordinates of the relevant points of the CAD representation of the component physical part in relation to coordinates of the CAD model as the physical component part is placed in a desired position in the physical model. The CAD representation of each component physical part is added to the CAD model such that the CAD model comprises an ensemble of individual CAD representations of component physical parts.

Although Azar arguably discloses scanning an object (not tracking an object) to obtain information for generating and displaying a computer image of the object, there is absolutely nothing in Azar that remotely discloses or suggests *generating a physical model of component parts, much less generating a CAD representation of the physical model using CAD representation of the component parts as such component parts are placed in the physical model,*


as essentially claimed in claims 1, 15 and 27.

Furthermore, there is absolutely nothing in Azar that remotely discloses or suggests a *tracking system that generates tracker data associated with a given component part, which is processed to determine the position and orientation of the component part with respect to the physical model as the component part is placed in a desired position in the physical model*, as essentially claimed in claims 1, 15 and 27.

Examiner has not specifically pointed to portions of Azar that expressly disclose the features of claims 1, 15 and 27, for example, or otherwise explained with any reasonable degree of clarity how Azar teaches the claimed features. It is respectfully submitted that one of ordinary skill in the art would undoubtedly conclude that Azar does not disclose the identical inventions as claimed, which is required under the Patent laws, much less remotely suggest the claimed inventions.

Accordingly, claims 1, 15 and 27 are patentably distinct and patentable over Azar. Further, all claims that depend from claims 1, 15 and 27 are patentably distinct and patentable over Azar at least by virtue of their dependence from respective base claims 1, 15 and 27 (although such claims are indeed patentable in their own right). Therefore, the withdrawal of all the rejections under 35 U.S.C. § 102(b) is requested.

Respectfully submitted,

  
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